How financial architectures shaped (and will continue to shape) Chinese drug development

4.5k words, 20 minutes reading time

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Note: this essay is connected to a prior one titled "Curious cases of financial engineering in biotech". I conclude that piece with the following paragraph:

> ***To end this off: I have deliberately left out China, which may be the most aggressive current example of financial architecture shaping a drug pipeline. That deserves its own essay, and will get one soon.***

This is that essay. And to those who already know vaguely understand this area: yes, 'NewCos' are part of the 'current state' section. The future will get more complicated!

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The current state of Chinese drug development

If you had to take a guess, why has China been out-licensing drugs so frequently?

I naively assumed it's because China got very good at moving through early-stage clinical development fast and because the domestic market is simply not as good as the US's. Neither of these are wrong, but they are incomplete, as they do not explain the *timing*. The speed advantage and the weak domestic market have both been true for the better part of a decade, but you really only started to hear about the out-licensing in the past few years; 2022 if your job depended on it and 2024 if not. Something else has to be doing the causal work.

And much of that "something else" has to do with finance. My claim is not that finance created Chinese biotech productivity, merely that it determined how the *shape* of that productivity interacted with the rest of the world. I'd like to start by discussing the contribution of one thing in particular: **Chapter 18A of the Hong Kong Stock Exchange (HKEX)**. Many, many things can be traced back to this particular rule.

But before we wonder what Chapter 18A is, we should first ask: where did Chapter 18A come from?

The proximate cause of it was none other than Alibaba.

In 2013, Jack Ma's company was preparing to go public, and Hong Kong was the obvious venue; Alibaba was a Chinese company and HKEX was one of the largest Asian exchanges. The problem was that Alibaba wanted to list under a specific partnership system, in which a self-selected group of twenty-eight insiders would have the perpetual right to nominate a majority of the board. Hong Kong's Listing Rules had forbidden this sort of arrangement for three decades under a principle known as "one share, one vote." The HKEX, after some months of public handwringing, declined to bend. So Alibaba took its IPO to New York, where arrangements like this had been legal since forever, and in September 2014 listed on the NYSE at a valuation of $231 billion. It was, at the time, the largest IPO in history.

Charles Li, the head of the HKEX, was understandably unhappy about a Chinese success story listing somewhere that was not China, and wrote this:

> *We respect the company's decision and wish it well.*
>
> *We are proud of our tradition of respect for the rule of law and adherence to principles.*
>
> *However, we also need to find ways to make our market more responsive and competitive, particularly with respect to new economy or technology companies.*
>
> *We have to consider possible changes where they might be necessary, with everything according to our due process. The Listing Committee's work on shareholding structures didn't start because of Alibaba and will not end now because of Alibaba.*
>
> *We need to ensure our markets continue to be relevant in the new era of economic development.*

Over the following four years, HKEX rewrote its rules to ensure an Alibaba situation never happened again. The product was a three-part reform package that took effect on April 30, 2018: Chapter 8A, Chapter 19C, and Chapter 18A. **This last one, Chapter 18A, is what we'll be concerned with, because it is the only one that was specific to biotech companies.** It allowed, for the first time, pre-revenue biotech companies to go public, without needing to satisfy any of the standard profit, revenue, or cash-flow requirements that other Chinese companies had to.

Now, this doesn't mean there were *no* requirements, but they were softened to match the financial flavor that early-stage biotechs often have. The requirements were as follows: at least one Phase I clinical trial completed with no regulatory objection to proceeding into Phase II; an expected market capitalization at listing of at least HK$1.5 billion (roughly US$192 million); two fiscal years of operating history under substantially the same management; and enough working capital to cover 125% of projected costs for twelve months after listing.

Charles Li, in the run-up to the rules taking effect, stated that he hoped Hong Kong would overtake NASDAQ in Chinese biotech listings within five years.

The initial results were spectacular.

Ascletis listed in August 2018. BeiGene, which had already listed on NASDAQ, did a secondary in Hong Kong. Innovent Biologics listed in October 2018 and quadrupled in the following year. Junshi, CanSino, Shanghai Henlius, Akeso, and dozens of others followed. By the end of 2021, the peak year, the cumulative capital raised under Chapter 18A had crossed HK$100 billion, and the number of listed companies was approaching fifty. Hong Kong had, just as Li had hoped, become the second-largest biotech listing venue in the world.

And then the biotech winter of 2021-2022 happened. By the end of 2022, of the 56 biotech companies listed under Chapter 18A, only 13 were trading at or above their IPO price. By the end of 2023, only 9 were.

The trajectory of what happened next should be quite clear. Here you have a cohort of roughly sixty pre-revenue biotech companies in one corner of the world, each holding a pipeline of clinical assets ranging from plausibly valuable to genuinely world-class, each prevented from raising equity by the collapse of its own share price, and each locked out of every other public-market financing channel due to geopolitical risk and uncertainty.

On the other side of the Pacific, US pharma companies were staring into the patent cliff, which represented somewhere between $180 billion and $250 billions of revenue at risk from drugs coming off patent by 2030, and desperately scouring the world for assets with which to fill the gap.

These two sides were made for each other. The 18A cohort had clinical pipelines and no capital. Big Pharma had capital and not enough pipelines.

Thus, the out-licensing boom you have heard so much about. In December 2022, Akeso licensed ex-China rights to ivonescimab, its PD-1/VEGF bispecific, to a small Miami-based company called Summit Therapeutics for $500 million upfront and up to $5 billion in total deal value. This was, at the time, the largest single-asset deal ever struck by a Chinese biotech. Two years later, in September 2024, ivonescimab beat Keytruda in a Phase 3, non-small cell lung cancer trial shocked the world, and every Big Pharma BD team reorganized itself around the working assumption that the next blockbuster might come from somewhere in Chongqing or Shanghai or Beijing or Guangzhou. In 2024 alone, Chinese firms out-licensed 94 projects to overseas companies, up from essentially zero a decade earlier. In 2025, the figure was 157 deals worth $135.7 billion. In the first half of 2025, roughly 32% of

global innovative-drug out-licensing value originated in China, up from single digits a few years prior.

Could this have happened without 18A?

If the 18A cohort didn't exist, the Chinese biotech industry would be a collection of private companies. Most of them would still be venture-funded, with valuations set by the more conservative Chinese VC culture rather than by the initially frothy public markets that slowly cooled. As such, the urgency to monetize pipelines would be considerably lower, and perhaps there would be little reason to aggressively do transpacific sales of intellectual property to Western buyers. And most important of all: without the clearly legible financial signals that public listing—which would not have existed without 18A!—offered to Western buyers, perhaps most would be too uncertain to ever commit hundreds of millions of dollars upfront to a China-based company they had never heard of, almost certainly slowing down the boom.

On the other hand, a lot of what drove the Chinese biotech ascendancy has nothing to do with 18A and would have happened regardless. China's primary regulatory authority for drugs, the NMPA, ran through a sequence of reforms starting around 2015 that compressed drug approval timelines from years to months and cleared a backlog of roughly 20,000 applications in two years. The Chinese CRO ecosystem, WuXi and so on, professionalized to the point that running a Phase I in China was genuinely cheaper and faster than running one in Cambridge. The talent got better too! A generation of Western-trained scientists returned to run R&D at Chinese biotechs under the Thousand Talents Plan. And on the demand side, the Western patent cliff was going to happen anyway.

So, the cleanest version of the argument is something narrower than "*18A caused the out-licensing boom*," which is probably too strong, and broader than "*18A was a minor contributor*," which is too weak. 18A did

not create Chinese R&D productivity, but it did shape how that productivity interacts with Western markets. Which is pretty interesting!

And the dominoes that were set up by 18A are only continuing to fall; Chapter 18A gave legibility to Chinese biotech's, which led to out-licensing, which surely should lead to something else. And what is that something else?

'NewCo's'. These days, Chinese biotech's are getting quite good at their job now, so good that they are beginning to get a bit more interested in the '*nearly infinite upside potential*' economics that makes drug discovery so appealing. Past that, HKEX biotech's trade at a substantial discount to their NASDAQ-comparable peers, more or less permanently, due to intense price negotiation by the Chinese government. These two, combined with the fact that China gets upset if one of its companies sets up shop abroad, has pushed financiers into increasingly creative territory.

And a solution soon manifested. Perhaps instead of a Chinese biotech accepting cash or royalties in exchange for their precious molecules, they should instead work with American funds to set up a US-based company *around* those molecules, taking a big chunk of equity for themselves, with the American funds taking the rest. You could argue that this is seemingly against the spirit of China's discomfort with its companies setting up shop abroad. I agree! But China is seemingly fine with it.

Kailera Therapeutics is the cleanest recent example of this. On the Chinese side, Jiangsu-based biotech Hengrui contributed its GLP-1 portfolio. Bain Capital, Atlas Venture, and RTW put in $400 million, a former US pharma executive Ron Renaud took the CEO seat, and the whole structure was operational within months. The US-based investors get a promising company in their portfolio; one fluffed up by the starry-eyed and optimistic US markets. And Hengrui takes equity in this US-

based vehicle, which, compared to a cash payment or bounded royalty, is uncapped on the upside. Both sides win.

As always, it's worth being a bit concerned by new and exciting developments in finance. What should we be worried about here? The obvious one is that every dollar of Western venture capital that gets deployed into a Kailera is a dollar that doesn't get deployed into a US-originated asset, with all the obvious caveats that venture capital is not neccesarily a fixed pool where every dollar is a one-for-one displacement. Either way, it's a rational thing to do, play the same M&A game that pharma usually does, but with the side that is actually winning. Is the long-run consequence that the US stops being good at the sort of early-stage discovery it was historically best at?

Whatever the answer is, we'll certainly be made aware of it in the upcoming decade.

The future of Chinese drug development

Well, maybe not a decade.

NewCo's are, really, a loophole to skirt around the real problems that China has: a relatively conservative venture culture that makes external capital especially appealing, and a weak domestic market due to intense CCP negotiation over the price of approved drugs. If these two conditions—the existence of which necessitated NewCo's—are easing, then perhaps…the future isn't NewCo's at all. But just normal, China-based biotech's, funded by locally available capital. Even the US venture capitalists won't win then!

Are the two conditions easing? Somewhat.

First, let's discuss venture capital.

It is well known that Chinese venture capital is particularly comfortable with the power-law investing that has become so popular abroad, and has historically never been. To help answer the call for high-risk capital, US venture capitalists have loved inserting their bony fingers into Chinese markets since the early 2000s, starting with Sequoia China. Unfortunately, this has largely stopped in the past ~6 years (for a lot of reasons that I'm not going to get into here, but the retreat likely heavily contributed to the aforementioned 2022 biotech winter in China).

Has the domestic venture ecosystem stepped up to the plate in the years since?

But before that, we should start with the basics. **Why is Chinese venture culture so risk-averse anyway?** The answer is that Chinese venture funds are, to some very real degree, entirely different financial instruments from US-based venture funds. In China, the LP base is overwhelmingly the state, which invests about six times more capital into the Chinese VC/PE market than privately-owned LPs do. You can imagine that government LPs come with political objectives, and political objectives may massively interfere with financial ones (drive capital to this prefecture, prevent loss of state-owned assets, etc.). The US lacks this rigmarole almost entirely. Here, the LP base is dominated by university endowments, public pensions, foundations, and family offices, all of whom have 10-year horizons and are explicitly interested in power-law portfolios.

But this may be changing. In December 2025, Beijing created a national venture fund backed by $14 billion from the central government, with at least 70% of the capital required to flow to seed/early-stage companies. Importantly, biomedicine and brain-computer interfaces are part of the explicit goals here, and the term '*patient capital*' appears more than once. Yes, $14 billion is not insanely high—though they have ambitions to raise it—and is in fact smaller than some individual US venture funds. On the other hand, a nearly identical strategy of *'centrally managed capital that is explicitly risk-seeking*' was practiced by, you

guessed it, China for semiconductor work. This risk-seeking fund, aptly named the 'Big Fund', had cumulative commitments north of $145B in the ~decade since its start. How has it fared? Mixed bag. The whole thing has had chronic governance problems and roughly one major scandal across each of its funds. On the other hand, Chinese chip capabilities seem to have clearly improved, so perhaps US venture funds should be a little spooked about their future.

Second, the weak domestic market.

As mentioned earlier, the problem here is that China aggressively negotiates the prices of any drug that wants to get on its single-payer reimbursement list, which covers roughly 95% of citizens. And China has perhaps the *most* negotiation power of any country on the planet by virtue of having the largest population! In 2025, the 114 newly added drugs to its national reimbursement list had price cuts of just over 60% compared to list prices. **And that's the average!** The tails are even crazier; one Chinese PD-1 inhibitor was priced at roughly one-thirtieth of its US price in mainland China.

This is obviously a good thing for Chinese citizens, but it does cut into China-based biotech revenue so heavily that it *forces* the NewCo structure to exist in order to take advantage of the massive US market.

But this too is being addressed. On December 7, 2025, China announced the 'Commercial Health Insurance Innovative Drug List', or CHIIDL, which is a collection of 19 therapeutics that are indicated for oncology, neurodegeneration, and rare diseases. If you are lucky enough to get a drug on this list, it will not be covered by basic medical insurance and instead will be eligible for commercial coverage. **And given that commercial providers have far less negotiating power, this practically guarantees that it will command a far higher price.**

And in these cases, the higher price is earned! Getting a drug on this list requires the following attributes: *'high levels of innovation, significant*

clinical value, substantial patient benefits, and coverage exceeding the scope of basic medical insurance'. Plenty of drugs don't meet that cut. Of the 19 that ended up on this list, they were whittled down from a list of 121 that passed a formal review. Now, to be clear, plenty of drugs on this list are Western drugs, but there clearly is a nationalistic ambition to foster some sort of stronger reward system for extremely useful, locally-developed molecules. For the first time in the modern era of Chinese drug reimbursement, there will be *some* Chinese biotech's that will not need an ~60% haircut to access the domestic commercial market.

It's a little bit annoying how clever this is. China is getting the best of both worlds here: heavily negotiated drug prices for me-too drugs (helping citizens) and offering heavier financial rewards to those who can create something that can go beyond me-too's (helping innovative biotech's).

To be fair, CHIIDL is a reference list rather than a **mandate**, which means actual uptake depends on commercial insurance, hospital prescribing behavior, and consumer willingness to pay. Chinese commercial health insurance is currently a small fraction of total Chinese health spending—much, much smaller than the equivalent share in the US or in most European systems. Because of this, it may never be enough to meaningfully alter the portfolio decisions of Chinese biotechs. But as the nation becomes richer and the list expands, who knows?

If you put both halves of the picture together—national venture funds being comfortable with high-risk bets, and domestic markets willing to disproportionately reward especially useful drugs—**the natural intermediate equilibrium that Chinese biotech is walking into is one that doesn't need any US capital for its most revolutionary drugs**. On a long-enough time horizon, maybe no US involvement at all. Hengrui spinning out a NewCo to monetize a GLP-1 in the US in 2024 starts to look, in retrospect, like a *transitional* structure that made sense when the

home market couldn't absorb the product, and that gets quietly phased out once the home market can.

Scary!

And it is not as if this is impossible. China has repeatedly used state capital, domestic-demand shaping, supplier ecosystems, and industrial coordination to build globally competitive positions in sectors like EVs, batteries, solar, shipbuilding, and high-speed rail. Of course, biotech has its own special bottlenecks compared to manufacturing, but there is no obvious reason it is categorically immune to the same broad industrial-policy logic.

But predicting the future is difficult. What we do know are two relatively recent updates to the picture we've been painting so far.

The first is that NewCo's themselves are no longer the most sophisticated financial structure available to Chinese biotech's. The largest of them have begun running foreign commercialization themselves, in one form or another.

For instance: consider the Co-Co.

A Co-Co—short for co-development and co-commercialization—is a situation in which a Chinese biotech and an international partner agree to actually run a drug *together* rather than the Chinese company simply handing it off. They split global development costs at some negotiated ratio, share foreign commercial profits and losses at the same ratio, and sit together on the joint steering committee that makes the actual decisions. The canonical example is Innovent's October 2025 deal with Takeda over Innovent's oncology drugs IBI363 and IBI343. This deal, which is the largest single BD transaction in the history of Chinese pharma, is as follows:

> *Innovent will receive a US$1.2 billion upfront payment upon closing of the transaction, which includes an equity investment of US$100 million in Innovent by Takeda. The upfront payment will be funded through cash on hand. Innovent will also be eligible for potential milestones and royalty payments, and a profit or loss split 60/40 (Takeda/Innovent) solely with respect to IBI363 in the U.S., where Takeda will lead the commercialization effort while Innovent will have a co-commercialization right.*

What is the point of this? Yes, there is increased equity buy-in, but more importantly, Innovent bought themselves a paid apprenticeship **in running a US drug launch**. Takeda is a Japanese pharmaceutical company, but it has such a large US presence that it fits the shape of my point. **In the future, Innovent may be able to just run the whole thing themselves.**

And in fact, Chinese biotech's building out foreign commercial infrastructure themselves is already happening. BeiGene is the cleanest case. Rather than license zanubrutinib (Brukinsa) to a Western partner, BeiGene stood up its own US salesforce and sold the drug directly into the American market. Brukinsa did $792 million in global sales, including $563 million in US sales, in Q1 2025 alone, and BeiGene gets 100% of that revenue.

This is interesting. **But these two cases are not, despite the temporal proximity, the natural endpoint of the reforms we've been discussing.** They are a parallel phenomenon. The Chinese biotechs in a position to attempt this are the few companies that have crossed a particular threshold of size. They can afford to run, or co-run, their US launches because they are genuinely large—not larger than Pfizer, certainly, but far larger than anything Chinese pharma has ever produced before. Neither structure requires reformed venture capital or a domestic market that pays for innovation. They just require being very, very rich.

Of these, only Innovent and BeiGene have actually pulled the trigger so far. Hengui is *also* large enough to attempt either move, but have been

content to extract very large license checks instead—Hengrui's GSK deal alone is worth up to $12 billion in milestones plus tiered royalties—which is also a perfectly reasonable life choice. Not every very-rich biotech wants to be in the business of running a US salesforce.

Today, the Chinese biotech ecosystem has stratified into several cohorts, each with its own financial architecture. Some doing pure out-licensing, some doing offshore NewCos, and then the ultra-large incumbents that have aged into something resembling Big Pharma, running foreign commercialization themselves either through a partner (Innovent) or directly (BeiGene). Some doing a mix of everything.

But another, final cohort may appear. I**f the venture and CHIIDL reforms have their way, there may begin to be globally competitive, locally funded Chinese biotech's with little-to-no US involvement at all.** All thanks to the immense funding and practical training provided by foreign biotech's, in exchange for China's very valuable set of drugs.

The US is, fairly publicly, deciding it doesn't love any of this. On December 18, 2025, the BIOSECURE Act was signed into law, which officially prohibits US federal agencies, contractors, and grant recipients from procuring biotechnology equipment or services from "biotechnology companies of concern". And while it doesn't name specific companies, it does note that institutions of concerns are one that are '*subject to the control or operates on behalf of the government of a foreign adversary (i.e., **China**, North Korea, Russia, or Iran)*'. The implementation timeline is long, but the direction of travel is clear.

The relevance to our story is not BIOSECURE itself, since BIOSECURE does not care about drugs, concerning itself with mainly contract research services. **Rather, the important part is what it signals.** The US is, slowly, empirically, becoming less comfortable with deep US-China integration in biotech.

If this tension persists, the cohorts above will not evolve at the same speed. NewCos are somewhat politically tractable: a Chinese-discovered molecule, wrapped in a US-based vehicle with American operators running it and American pharmacy revenue flowing through it. But Co-Cos are the opposite. They require deep operational entanglement between a Chinese parent and a US partner, specifically the kind of entanglement US policy is becoming hostile to. Self-commercialization—BeiGene's efforts—sits awkwardly in the middle: the US sales infrastructure is American, but the parent company and the value capture are unambiguously Chinese, and it is not hard to imagine that too becomes questionable.

What's my argument here? **It is that for a Chinese biotech, the structures requiring deep US-China integration are the most politically fragile, while the structures focusing on the domestic market are the most politically robust.** As a result, the hypothetical cohort of *domestic-Chinese-biotech's-serving-domestic-markets* may arrive faster than anyone expects! Not because the reforms are working especially well, but because the alternatives are being closed off from the other side. Thus, the CCP-level incentives to ensure the reforms *work* will grow even stronger, since the domestic path has gone from being the consolation prize to being the one that actually ensures the survival of local biotech. Soon, the playbook may be to build the drug at home, partner only in the ways needed to survive without upsetting any foreign nation and capture the value entirely in a company situated in Shanghai rather than Cambridge.

Conclusion

What a yarn I've spun! Of course, you should take all my predictions with a grain of salt. I'm certainly no China expert, and if there is a close parallel to the genuine omniscience I've noticed in neurotechnologists, it is within the brains of China-oriented policy wonks.

My real point is this: **every step in this story has been driven by financial architectures.**

Chapter 18A made pre-revenue Chinese biotech's publicly legible, which made the out-licensing boom possible. NewCo structures created a way for Chinese biotech's to capture US enterprise value without surrendering it. Co-Cos created a way for the largest Chinese pharma to build global commercial capability through paid apprenticeship. The CHIIDL is, slowly, creating a way for innovative drugs to command something approaching Western prices inside China. The state-ran venture fund is attempting, with mixed prospects, to substitute state capital for the dollar funds that left. And BIOSECURE is constructing the legal scaffolding that determines which of these structures remains accessible and on what timeline.

None of this is about molecules.

Drug discovery represents one of the more expensive and logistically complex undertakings humans regularly attempt. It is tempting to simplify it down to some atomic element; target-selection, clinical trials, and so on. Many of the simplifications serve a purpose and are useful. But if we're trying to understand the *whole* picture, we'll have to get our hands much dirtier. Drug discovery leaks through every abstraction we place on top of it, inconveniently bleeding its way into seemingly unrelated concepts. That bleeding is rarely useful to track in isolation. But follow it for long enough, and it start to explain a surprising amount of why the pharmaceutical industry—Chinese or otherwise—has organized itself the way it has.